

*Belfast Naturalists' Field Club*  
1919  
ANNUAL REPORT

... AND ...

# PROCEEDINGS.



SERIES II.  
VOLUME VIII.

Part I.  
1918-19.

For Contents See Back of Cover.



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ANNUAL REPORT AND PROCEEDINGS  
OF THE  
**BELFAST NATURALISTS'**  
**FIELD CLUB,**

FOR THE YEAR ENDING 31st MARCH, 1919,

(FIFTY-SIXTH YEAR).

SERIES II.

VOLUME VIII.



PART I.

1918-19.

Belfast:

PRINTED AT "THE NORTHERN WHIG" OFFICE, VICTORIA STREET.

1919.



# BELFAST NATURALISTS' FIELD CLUB.

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FIFTY-SIXTH YEAR, 1918-19

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Mrs. Gibson.

R. LL. Praeger, B.A.,  
B.E., M.R.I.A.

#### **Retire 1920.**

W. B. Burrows.

Major A. R. Derryhouse,  
D.Sc., F.G.S., M.R.I.A.

Fergus M. Greeves.

#### **Retire 1921.**

Miss E. L. Andrews.

Robert Bell.

Rev. K. Dunbar.

# SECTIONAL COMMITTEES.

1918-19.

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## JUNIOR SECTION.

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J. R. H. GREEVES.

S. A. BENNETT, B.A., B.Sc.,

*Hon. Sec. of the Section,*

Campbell College,

Belfast.



# Annual Report.

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AT the close of the Fifty-sixth year the Committee have again to record an increased membership. 12 Ordinary, 4 Associate, and 4 Junior Members have been enrolled during the year; 14 members have intimated their decision to resign their membership; 5 members have died: so that at the end of the year the membership stands as follows:—Honorary 3, Corresponding 1, Life 3, Ordinary 280, Associate 14, and Junior 14. The Committee regret the loss during the year of Miss L. A. Walkington, LL.D., and Mr. J. N. Milne. Twelve meetings of Committee have been held during the Session, at which the attendances of members were as follows:—

A. M'I. Cleland ...	... 11	Mrs. Gibson ...	... 6
S. M. Macoun ...	... 11	S. A. Bennett ...	... 6
Miss S. Blackwood ...	... 10	R. Bell ...	... 6
Miss M. W. Rea ...	... 10	Mrs. Cleland ...	... 1
N. Carrothers ...	... 9	Rev. K. Dunbar ...	... 1
Dr. J. K. Charlesworth ...	... 9	Fergus M. Greeves ...	... 1
J. A. S. Stendall ...	... 9	Miss E. L. Andrews ...	... 0
S. Wear ...	... 9	Major A. R. Derryhouse ...	... 0
W. B. Burrowes ...	... 8	R. L. Praeger ...	... 0
R. May ...	... 8		

The excursion programme, somewhat curtailed, was carried out, the following being the places visited during the Summer Session:—

Saintfield (Half Day)	... ..	18th May.
Giants' Ring, Drumbo, & Farrell's Fort		
(Half Day)	... ..	1st June.
Muckamore (Half-Day)	... ..	15th June.
Comber (Half-Day)	... ..	29th June.
Raughlan ...	... ..	27th July.
River Lagan (Half-Day)	... ..	10th Aug.

At the excursions the average attendance of members and friends was roughly 45, a decrease of 6 on last year's figure of 51.

The Winter Session opened with a very successful *Conversazione*, held in the Carlton Hall on the 23rd October, 1918, at which some 240 members and friends were present.

During the Session the following papers (of which abstracts will be found in the Proceedings) were read :—

#### 1918.

November 19th—"Interim Report on the Survey of the Isles of Strangford Lough," A. M'I. Cleland.

December 3rd—"Britain in the Ice Age"—Part I., Dr. J. K. Charlesworth, M.Sc., F.G.S., M.R.I.A.

December 17th—"The Bronze Age in Ulster," Charles Bulla.

#### 1919.

January 7th—"Britain in the Ice Age"—Part II., Dr. J. K. Charlesworth, M.Sc., F.G.S., M.R.I.A.

January 21st—"The Warfare of Animals," Professor G. H. Carpenter, D.Sc., M.R.I.A.

February 18th—"The Fenland of East Anglia and its Vegetation," Professor R. H. Vapp, M.A.

March 18th—"Mexican Pyramids and Ancient Architecture," David E. Lowry.

April 1st—"The Adaptation to Environment of Deep Sea Life," A. Milligan, B.Sc.

The Strangford Lough Survey Committee has accomplished much useful work during the past summer; its report, which took the form of a lecture by the President of the Club, is given *in extenso* in the Proceedings.

The Treasurer will lay before you his Statement of Accounts, which shows a balance in hand of £9 12s 1d. The Reports of the Librarian, and of the Junior and Associate Sections, will be presented.

In conclusion, your Committee desire to tender their thanks to H. Armytage Moore, Esq., and Major Blackwood Price, of Saintfield, Miss Thompson, The Grange, Muckamore, Miss Fford, Raughlan, Rev. W. Cordner, Drumbo, and Canon Ryder, Drumbeg, for their hospitality and kindness extended to members



of the Club on the Summer Excursions; to the Press for publishing reports of the Excursions and Meetings; to the Superintendents of the Railway Companies for the way in which they have met our wishes in the difficult times through which we have passed; and to the Kindred Societies and Public Institutions that have favoured us with their Publications.

(Signed)

MARGARET W. REA, }  
J. K. CHARLESWORTH, } *Hon. Secs.*

### **Librarian's Report.**

The Library has been used to about the usual extent. From time to time we arrange new Exchanges of Proceedings with Kindred Societies. We have just completed arrangements for an exchange with the Essex Field Club.

(Signed)

SYLVANUS WEAR, *Librarian.*

### **Report of the Junior Section.**

The membership on April 1st, 1918, was 26; during the year 4 new members have been elected, while 8 resignations have been notified, leaving a present membership of 22.

Six Excursions were arranged, in conjunction with the Associate Section, as follows:—

June 6th—Holywood Woods; June 18th—Shaw's Bridge to Drum Bridge; July 2nd—Macedon Point, Whitehouse; July 18th—Knock Brickworks; Aug. 6th—Carr's Glen; Sept. 10th—Squire's Hill Quarry.

Five Winter meetings were also held as follows:—

1918, Nov. 28th—"Fossils and how they are formed," by S. A. Bennett, B.A., B.Sc.; Dec. 12th—"Dispersal of Seeds," by Miss Olive Ferguson; "Archeology of the Upper Ards," by J. R. H. Greeves;

1919, Jan. 9th—"Natural History Photography," by Humphrey Gilmour; Feb. 20th—"Pond Life," by J. Gourlay; March 13th—"What we get from Coal," by A. M'I. Cleland.

The Section is extremely indebted to Mr. A. R. Hogg for supplying and showing a kinematograph film at two of the meetings, and to him tender grateful thanks.

The attendances during the past Session leave something to be desired, though out of so small a membership the percentage has been fair. An increased membership would greatly facilitate the working of the Section, and the Committee confidently appeal to the ordinary members of the Club to assist them to secure the desired increase.

(Signed)

S. BLACKWOOD, *Hon. Sec. of the Section.*

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#### **Report of the Associate Section.**

The Meetings and Excursions of this Section were held according to programme, but the attendance was, in the opinion of the Members of the Committee, not such as to justify the continuance of the Section under existing conditions.

(Signed)

S. A. BENNETT, *Hon. Sec. of the Section.*



# Proceedings.

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## SUMMER SESSION.

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### SAINTFIELD.

On May 18th the first excursion of the Summer Session was held at Saintfield, under the leadership of Mr. S. A. Bennett.

The party visited the Church, and then walked through the demesne of Saintfield House, by permission of Mrs. Blackwood Price. Returning through Saintfield a quarry in the Silurian grits was visited. The party then proceeded to Rowallane, the grounds of which were kindly thrown open by permission of Mr. H. Armytage Moore. The Rock Garden—just in its prime—was a blaze of colour and much enjoyed by the members present.

The party was unusually large, 122 members and friends gathering at Rowallane, where tea was served. A vote of thanks to Mr. and Mrs. Armytage Moore, proposed by the President, and seconded by the Rev. C. H. Waddell, B.D., terminated the usual business meeting, at which six new members—Miss U. C. Slane, Mrs. Byrne, Miss Lowry, Messrs. Eric Lindsay, A. G. Lewis, and G. Crozel—were elected.

The only wild plant of note seen was the Adder's Tongue Fern (*Ophioglossum vulgatum*).

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### GIANTS' RING, DRUMBO, AND FARRELL'S FORT.

On June 1st fifty-four members and friends of the Club met the conductor (Mr. W. B. Burrowes) at Malone tram terminus and walked to the Giants' Ring. Mr. Burrowes explained to the party the recent research work carried out under the auspices

of the Belfast Nat. Hist. and Phil. Society in this important monument. A further walk of two miles brought the party to Drumbo, in the ancient graveyard of which the ruins of the Round Tower were inspected. Mr. R. May described the origin and uses of these early Christian Bell-houses, based on the authority of Petrie, O'Donovan, O'Curry, and Salmon. After tea, which was partaken of in the schoolroom, the usual business meeting was held, the President (Mr. A. M'I. Cleland) in the chair. A vote of condolence was passed on the death of Miss Walkington, who had always taken a great interest in the Club. The Rev. J. Cordner, B.A., was then thanked for his kindness in allowing the use of the schoolroom. Two new members were afterwards elected. On the return journey Farrell's Fort was visited. The botanists found Drumbo Glen interesting—*Melica uniflora*, *Asperula odorata*, *Polystichum aculeatum* were noted, also a fine plant of *Vicia sepium* with pure white flowers. *Ulex Gallii* was observed growing in a hedge on the road coming from Farrell's Fort.

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#### MUCKAMORE.

The third excursion of the Summer Session was held on 15th June, when about twenty members and friends travelled by the 2 p.m. train to Muckamore. A pleasant walk of about two miles brought the party to Muckamore Abbey, where, by the kind permission of Captain Thompson, the historic grounds were visited. Muckamore House occupies the site of the ancient priory, and a small portion of the ruins of the Abbey are still standing outside the garden wall. Muckamore, one of the most celebrated monasteries in the Diocese of Connor, was founded by St. Colman Ela, late in the sixth century. His mother was a sister of St. Columbille. Mr. R. May gave a short historical account of the Abbey. The party, by the kind permission of Major Maxwell, also visited the beautiful grounds of the Model Farm.

## COMBER.

The fourth excursion of the Summer Session took place on 29th June, when about 24 members visited Comber and Rough Island. The party arrived at Comber at 2.20 p.m., and under the conductorship of the Rev. K. Dunbar proceeded by way of Castle Street and the Square to the Comber River. The route lay for some distance along a quiet country lane until it led to the shore half-a-mile from Island Hill. The estuarine marsh afforded a good field for the botanist. The rarer noted species here included *Spergularia rupestris*, *Apium graveolens*, *Samolus Valerandi*, *Suaeda maritima*, and *Polygonum maculatum*. Other species, such as *Silene inflata*, *Salicornia herbacea*, *Glyceria distans*, *Plantago Coronopus*, *Cenante crocata*, *Glaux maritima*, *Spergularia media*, and *Festuca rubra* were also seen. On the shore near Castle Espie a large flock of over thirty Swans excited interest.

Tea was served in a field at Island Hill at 4.30. Owing to the tide being full it was found impossible to visit Rough Island. Those of the party who remained till the late train had a most enjoyable walk back to Comber by way of the fields through Cherry Valley.

The following 30 species of Birds were noted by Mr. Nevin H. Foster, M.B.O.U., during the afternoon:—Song-Thrush, Blackbird, Stonechat, Redbreast, Whitethroat, Willow-Wren, Sedge-Warbler, Hedge-Sparrow, Blue Titmouse, Wren, Grey Wagtail, Meadow-Pipit, Swallow, House-Martin, Greenfinch, House-Sparrow, Chaffinch, Corn-Bunting, Yellow Bunting, Reed-Bunting, Starling, Jackdaw, Rook, Skylark, Mute Swan, Landrail, Redshank, Curlew, Common Tern, Black-headed Gull, and Herring-Gull. The most interesting ornithological feature was the observation of the Stonechat (one female seen), as the severe Winter of 1916-17 had exterminated this species in some districts in Ireland [*vide Irish Naturalist*, Vol. XXVI.].

The four common species of Woodlice were found during the few minutes available for collecting in suitable places, but only one Millepede, a *Polydesmus*, was seen.

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RAUGHLAN.

The fifth Summer excursion took place on 27th July, when 7 members and 1 friend, under the conductorship of Mr. S. M. Macoun, travelled by the 10 o'clock train to Lurgan, and thence drove via Kinnegoe to Raughlan, a wooded peninsula jutting out into Lough Neagh. Glorious sunshine favoured the party, and a pleasant day was spent exploring the locality. Previous to departure from Raughlan in the afternoon the President, Mr. A. M'L. Cleland, thanked Miss Fforde for her kind permission to visit her place, and the party returned via Derrymacash to Lurgan. Tea was served in the Shankhill Restaurant, and at the subsequent business meeting Miss Adams and Mr. Merrifield were elected ordinary members. The 5.54 train brought the members back to Belfast.

Along the margin of the lake, both above and below the present water level, the ground was carpeted with large patches of *Littorella lacustris*. On a bridge near Lurgan the Scale Fern, *Ceterach officinarum* was found growing in company with *Asplenium Adiantum-nigrum*, *A. Trichomanes*, and *A. Ruta-muraria*. By the side of a deserted cottage *Matricaria discoidea* and the Tea Plant, *Lycium barbarum*, were noted. Only 3 species of Sedges were observed, viz., *Carex Goodenowii*, *C. panicea*, and *C. flava*. The most interesting botanical find of the day fell to the conductor, who discovered *Spiranthes Romanzoffiana* growing in a dry meadow about fifty yards from the water's edge. In addition to the above mentioned the following of our more local plants were identified :—*Hypericum tetrapterum*, *Lythrum Salicaria*, *Cicuta virosa*, *Ceanothe crocata*, *Pulicaria dysenterica*, *Lysimachia vulgaris*,

*L. Nummularia*, *Mentha arvensis*, *Lycopus europæus*, *Prunella vulgaris*, *Alisma ranunculoides* (a plant ten inches in height noted), *Sagittaria sagittifolia*, and *Butomus umbellatus*.

Little attention was given to Ornithology, but the song of the Chiffchaff was heard--this being its Autumn resumption--whilst Sedge-Warblers were continually in evidence mimicing the songs of several other species. Many Black-headed Gulls were on the lough, the majority of them in immature plumage. Some collecting was done in the Invertebrate groups. The collection of Fresh-water Mollusks did not contain any novelties. In the Class Crustacea the four common species of Woodlice were identified, as were also the fresh-water Isopod, *Asellus aquaticus*, and the fresh-water Amphipod, *Gammarus locusta*. The Myriapods collected included *Tachypodsiulus albipes* (= *Iulus niger*), *Lamyctes fulvicornus*, and a specimen which is doubtfully referred to as *Monotarsobius dubosqui*. The specimens of *M. dubosqui* proved an addition to the Co. Armagh fauna, and were of such a distinct variety that they have been described subsequently in the *Irish Naturalist*, Vol. XXVIII., p. 4, 1919, as "var. *fosteri*," in honour of their captor. Among Insects the only order to which any attention was paid was that containing the "Bristle-Tails," and of these two species were obtained, *Campodea gardneri* and *C. fragilis*.

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#### RIVER LAGAN.

The sixth excursion of the Summer Session was held on 10th August, along the banks of the Lagan from Shaw's Bridge to Drumbeg. A party of 30 members and friends met at the hour appointed, and, as the district is one peculiarly rich in plant life, the botanists were soon hard at work, the following plants being specially noted:—*Ceterach officinarum*, *Asplenium Trichomanes*, *Epilobium hirsutum*, *Hypericum quadrangulum*, *Lotus uliginosus*, *Lythrum salicaria*, *Valeriana sambucifolia*, *Butomus umbellatus*,



*Lycopus europæus*, *Nasturtium amphibium*, *Epipactis latifolia*, *Equisetum hyemale*, *Sagittaria sagittifolia*, *Linaria Cymbalaria*, *Typha latifolia*, and *Solanum Dulcamara*. In the river *Potamogeton pectinatus* appeared to be dominant.

On reaching Drumbeg tea was served in the Parochial Hall, the use of which had been very kindly permitted by Canon A. R. Ryder, D.D. After tea the usual business meeting was held, the President (Mr. Cleland) in the chair. One ordinary member—Mr. Eustace Gordon—was elected. The party then visited the Church, where the fine memorial gate and the yew tree arches in the churchyard, also the beautiful memorial windows in the Church itself, were much admired.

From the Church the members proceeded to view the grounds of Drum House, which had been very courteously thrown open by the present owner, Sir Samuel R. Keightly. Here the party separated, some returning to town by the road, some by the river. Of the latter a few crossed to Edenderry by the weir bridge, and so varied their return journey.



## Winter Session.

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NOTE.—*The authors of the various Papers of which abstracts are given, are alone responsible for the views expressed in them.*

### CONVERSAZIONE.

The Winter Session opened with a Conversazione, held in the Carlton Hall on Wednesday, 23rd October, about 212 members and friends being present. Tea was served again this year in the Restaurant from 8-15 till 8-45 p.m., thus leaving more room for exhibits in the large Hall.

The following exhibits were contributed :—

GEOLOGY.—Mr. R. Bell showed a fine collection of basaltic minerals. Mr. W. Green had on view a very interesting series of fossils from the Upper Cretaceous beds of Co. Antrim. Mrs. A. M'L. Cleland exhibited a number of specimens illustrating the Geology in the neighbourhood of Ballycastle, Co. Antrim; and Mr. Cleland, an excellent example of chalcedony from Carnmoney quarry. Dr. Charlesworth showed, with the aid of the microscope, sections of basalt, limestone, and sandstone. Mr. J. Gourlay, fossils from Squire's Hill.

BOTANY.—Mr. N. Carrothers, photographs and pressed specimens of wild flowers. Mr. A. W. Stelfox, wild roses in fruit, accompanied by sketches illustrating the distinguishing features of the various species; *Rhamnus catharticus* from Creagh Bog, Toome, Co. Antrim; *Vaccinium Vitis-Idaea* in fruit, grown as a garden plant. Mr. E. A. Armstrong, damage wrought in narcissus bulbs by the narcissus flies—*Merodon equestris* and *Eumerus strigatus*; also photos. and pressed specimens of Primulas of various species. Mr. S. A. Bennett, The Water Ranunculi of

Co. Down. Mr. J. R. H. Greeves, plants from the Strangford Lough area. Rev. C. H. Waddell, mosses from the Strangford Lough area, also *Galium cruciatum* from Mountstewart grounds. Rev. W. R. Megaw, *Triticum caninum* from Cullybackey; *Poa compressa* from near Holywood; *Poa nemoralis* from Ballymena; *Galium sylvestre* from Co. Antrim; *Galium Mollugo* from Garron Point and *Rumex sanguineus* from Helen's Bay. Miss M. W. Rea, mounted seaweeds from northern coast of Co. Antrim and from the Strangford Lough area.

ZOOLOGY.—Mr. Herbert Malcomson had a fine exhibit of Lepidoptera, including mounted specimens showing protective resemblance in moths. Mr. J. A. S. Stendall exhibited under the microscope the circulation of blood in the foot of the Common Frog. An exhibit illustrating the structure of a bird was staged by the Belfast Municipal Museum.

ARCHÆOLOGY.—Miss E. Andrews, "The Glastonbury Lake Village," by Arthur Bulleid, F.S.A., and Harold St. George Gray; also pottery from Lake Village at Nuare. Mr. W. R. Pim, piece of the first "Gotha" that raided London—L32. Miss Mawdsley, domestic objects from British East Africa and Uganda. These included—cover for a plate, native work: whisk made of grass; native dress: bead-work, Swahili tribe; table-cover design and embroidery, native work; and a water-bottle, Masai tribe, from British East Africa. A bark-cloth from Uganda concluded this varied and interesting exhibit.

One of the most interesting exhibits of the evening was that devoted to the results of six months work by the Strangford Lough Survey Committee.

The Geological exhibit comprised a fine range of erratics from the drift of the various islands in the Lough visited during the Summer Session of 1918, viz.:—Rough Island, Reagh Island, Mahee Island, Sketrick Island, Chapel Island, Mid and South Islands, and Ringhaddy Island. The exhibit also included

specimens of pottery from Castle Espie and several species of snails. The Botanical finds are referred to above.

After tea the President, Mr. A. M'I. Cleland, took the chair, and in the course of his remarks said that some of their original members were still with them, though the Club was founded almost fifty-six years ago. He then commented on the reasons which led to the formation of the Junior Section, and read out the titles of six lectures to be delivered during the coming winter. At this stage Mr. Humphrey Gilmour was presented with a prize won in the Junior Section. The next item was the announcement of the winter programme. During the evening Mr. Joseph Robinson and Mr. A. M'Dowell were elected as ordinary members, Mr. Geoffrey G. Quick and Mr. Kenneth J. Quick as junior members.

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#### STRANGFORD LOUGH SURVEY.

##### (Interim Report).

The first meeting of the Winter Session was held in the Museum on November 19th, the Vice-President (Mr. S. A. Bennett) occupying the chair. After a brief reference to the close of the war and the advent of peace, the President (Mr. Cleland) introduced the subject of the evening, the "Interim Report of the Strangford Lough Survey Sub-Committee," which first dealt with the topography of the lough, its tides, currents, islands, etc.

Some interesting facts were brought forward in connection with above, among them being the maximum sounding of 216 feet at the Lough entrance to the Strangford Narrows, diminishing to only 42 feet at the sea exit. Mr. Cleland went on to say that there were 230 islands, of which 95 were visible at high water. Thirty-three had an area of 10 acres and upwards. On the western side there was a long line of well-defined islands, while the eastern coast showed barren islets.

The nomenclature of the islands was next dealt with, from which it would appear that most of the islands are named from their colour or from their fancied resemblance to some object, or from being the resort of some particular animal. For instance, the "Selk" islands, three in number, plainly indicate that at one time the "selk" or common seal was an inhabitant of the waters of the lough.

The Geology of the islands was dealt with very fully in the Report, mention being made of the raised beaches at Chapel, Rough, and Reagh Islands. Particular attention was drawn to the question of "erratics." Lantern slides of the erratics near Sketrick showed that they contained cavities which looked like pot-holes, but were merely nodular cavities originally containing iron nodules. The erratics were unevenly distributed—for example, at Ringhaddy there were very few; the eastern islands showed a great variety among the erratics. The presence of Ailsa Craig eurite and Castle Espie limestone among the erratics was commented on and their bearing upon the general theory of the northern glacial ice-flow.

With regard to the antiquities of Strangford Lough, this part of the Sub-Committee's work was not very fully dealt with in the Report owing to the large extent of the ground to be covered. A hint was thrown out, which it is hoped will be acted upon in the near future, that the soil of Island Mahee should yield a rich harvest to the antiquarian investigator and excavator.

The sections of Zoology, Ornithology, and Entomology were lightly touched on, as these sections apparently require more workers in order to do them justice.

Coming to Botany there was evidence here that much good work had been done. The plants had three distinct zones or habitats:—(1) Submerged sea-grass meadows; (2) The open association of the Saltwort; (3) Strand plants, such as *Glyceria maritima* and the *Spergularias*. Chapel Island yielded 60 species; Rough Island 100 plants. The lists of plants showed the presence

of the Vernal Grass, Wild Celery, Pyramidal Orchid, and two of our rarer grasses, *Poa nemoralis* and *Lepturus filiformis*. Due account was also given of the mosses and seaweeds in the area under discussion.

The lecture was illustrated by lantern slides, including diagrams and photographs. Some fine maps were on view; also a collection of erratics, flowering plants, seaweeds, types of birds seen, snails, etc. Particular mention should be made of the block of Castle Espie limestone found by Mr. R. Bell *in situ*. Its surface had been finely polished by ice action and showed glacial striae running in two directions. The meeting terminated with some appreciative remarks from Dr. Charlesworth and Mr. Bennett.

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#### THE BRONZE AGE IN ULSTER.

The second meeting of the Winter Session was held in the Museum on December 17th, when Mr. Charles Bulla gave an address entitled "The Bronze Age in Ulster." The President, Mr. Cleland, occupied the chair. Mr. Bulla prefaced his paper by saying that from the early days when Abraham sought to purchase ground for a burial place, down through the ages, the incidents connected with the interment of the remains of those who have been near and dear to us form a striking chapter in human interests.

In Ulster the burial customs of the preceding generations varied with the districts, and were slow to change, innovations being thought to be unacceptable to the deceased or their surviving friends. Mr. Bulla went on to say that the Book of Ballymote made some references to cremation. The ceremonies were elaborate in the period preceding the Iron Age; the funeral pyre, the rites, the possible feasts; then after cremation the placing of the calcined bones and charcoal in a clay urn, ornamented according to its place in the time calendar of the Bronze Age.

These items of pottery are the gems of the collector, and the lecture was well illustrated by examples, sketches, and drawings.

Urns nowadays are divided into classes according to shape, age, or position in the scale of time: so we have "Beakers," "Food Vessels," "Cinerary Urns," and lastly "Pygmy Urns"—the last class generally but two inches in height and width. Very few of these Pygmy Urns have been found in Ireland. Occasionally a beautifully decorated lid accompanied the urn. Ulster urns are of great variety and many are truly artistic. Until recently one of these "Urns" was an urn and little more, but through the labours of such as Lord Abercromby they are now taking a definite place in the graduated scale of time into which the Bronze Age is portioned out.

Not the least interesting part of the lecture was the criticism of the urns contained in the Belfast Municipal Museum, with Lord Abercromby's notes.

In the discussion which followed, Mr. Robert May drew attention to the fact that people expect to find gold in the urns, and this was the reason they were often destroyed. A whole cemetery of them was found near Moira some time ago, only a few of which were rescued. Miss Andrews commented on the fact that some of the pottery makers belonged to a "short" race. The meeting terminated with the election of Miss G. Smyth, Miss N. Roden, and Miss McKibben as associate members of the Club.

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#### THE FENLAND OF EAST ANGLIA.

The third meeting of the Winter Session was held in the Museum, College Square North, on the 21st of January, the President, Mr. A. M'L. Cleland, occupying the chair. Professor R. H. Yapp, M.A., gave an address entitled "The Fenland of East Anglia and its Vegetation." The first part dealt with the general characteristics of the Fenland and the ancient industries carried on there.

In early historic times the Fenland was a great swampy plain; now it has been drained and yields excellent crops. There are still a few undrained spots, and the lecturer drew attention to one of these, viz. :—Wicken Fen, ten miles north of Cambridge. The vegetation of the fens is influenced by the character of the soil, which, unlike the Irish bogs, is not acid, but neutral, owing to the water supply coming from the chalk.

In places large tree trunks are exposed, the tops of most of which lie to the North-East; therefore we can conclude that the prevailing winds have not changed in direction since early times.

During the remainder of the paper Prof. Yapp dealt with the different types of plants inhabiting the fen—acquatic, semi-acquatic, and terrestrial. The method by which the plants of each group obtained their supplies of oxygen and resisted the effects of drying winds were dealt with in detail, with the aid of an excellent series of lantern slides.

During a short discussion that followed points were raised by the Chairman, Dr. Charlesworth, and Mr. Stelfox, to which Prof. Yapp briefly replied. The meeting terminated with the election of Mr. Strain (ordinary), Mr. M'Bride (associate), and Mr. Bent (junior) as members of the Club.

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#### THE WARFARE OF ANIMALS.

The fourth meeting of the Winter Session was held in the Museum, College Square North, on Tuesday evening, 18th February. The President, Mr. A. M'I. Cleland, occupied the chair. Professor Carpenter, D.Sc., Royal College of Science, Dublin, dealt in an interesting manner with the "Warfare of Animals," saying that the Darwinian conception of the struggle for existence has long been well-nigh a commonplace among Naturalists and has captured the imagination of people generally. A certain school of philosophers laid hold of this doctrine as a justification for the biological necessity of war; but we must



remember that Darwin used the phrase in a large and metaphorical sense. Examples of weapons—teeth, pincers, poison-fangs—and of defensive armour of many kinds may be seen among animals; but in the use of such weapons the animal is far more hunter than soldier. Among the many beautiful lantern slides with which the lecture was illustrated was one showing that even shells were not protection enough from enemies in some cases, the shell having been bored through by an enemy and the animal extracted. Defence by appearance, illustrated by the familiar yet always fascinating instances of protective coloration among butterflies and their caterpillars, suggests another aspect of the “warfare,” and introduces the importance of behaviour. Here we find instinct, care of eggs or young, nest-making, comradeship, of supreme importance, as shown by the elimination of the great armoured Dinosaurian reptiles of the Secondary Period of the earth’s history and the rise of birds and mammals to the forefront of the animal world. This may indeed show that the “Warfare of Animals” in the Darwinian sense is a real factor, working for perfection. Only in very few cases—such as in certain ants—do we find organized combats between armies of nearly allied species, resembling the warring of human nations and races.

At the conclusion Mr. Foster proposed, and Professor Yapp seconded, a hearty vote of thanks to Dr. Carpenter for his able address. Dr. Carpenter having replied, the meeting terminated with the election of Mr. W. J. Macknight as a junior member of the Club.

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#### MEXICAN PYRAMIDS AND ANCIENT ARCHITECTURE.

The fifth meeting of the Winter Session was held in the Museum on March 18th, when Mr. D. E. Lowry gave a lecture entitled “Mexican Pyramids and Ancient Architecture.” The President, Mr. A. M’I. Cleland, occupied the chair. Mr. Lowry prefaced his paper by giving a resumé of the history of Mexico. He said that when Cortes reached the City of Mexico the Aztecs

were the rulers, but they had only been in possession 300 years. The earlier Toltec race were the builders of the Pyramids. In style and ornamentation these were similar to those of Egypt and quite as large, with their four sides to the points of the compass, but not built as huge mausoleums, being in all cases surmounted by a temple. The pyramid in reality forms the base of the temple. These builders were no savage tribe, but a race with thousands of years of culture behind it, with art, science, poetry, and architecture of a class similar to that of Africa or Asia.

There were several theories regarding the advent of an Eastern race in the extreme West. The most acceptable one is that which supposes they came by way of Ceylon, Java, Malay peninsula, and thence by various islands across the Pacific. The lecturer went on to say that the Mayan temple-builders were at the height of their activities about the 6th or 7th century of our era. Their characteristics are written in their architecture and preserved in the traditions of the later races that supplanted them. They were not warriors, but cultured and refined, with a high standard of morality and deeply religious. The great pyramids, terraced temples, and palaces are of fine proportions, elaborate decoration, and artistic design. The buildings and decorations are so similar to those in Ceylon and Java that it seems most improbable for both places so far apart to have developed, independently, architecture on similar lines. Therefore, the suggestion is that they had a common origin. Gradually, through contact with other tribes, the style of building and ornamentation altered, until after 800 or 1,000 years, in Aztec times, we should scarcely recognise the art of the earlier inhabitants. The greatest pyramid had a temple on its top dedicated to the Sun. This pyramid was scarcely inferior in size to that of the largest Egyptian one.

Up till Aztec times there is no history of human sacrifice, but with them the taking of human life seemed the only way to appease the gods, and so they introduced it to the country of their adoption, and all prisoners taken in war were sacrificed on

the great convex stones found on the top stories of the pyramid temples.

The beautiful lantern slides included the house of Cortes in Mexico City and types of architecture from the earliest times. The carvings and decorations showed that Bhuddist and Indo-Chinese influence was dominant. At a later period there came a change: the figures were upright and had feather head-dresses. There was thus a gradual change in the sculptures; from being calm and meditative they became warlike, and so in time could not be recognised as emanating from an eastern source. Mr. Lowry mentioned the great Aztec calendar stones—one weighing 25 tons being set in the wall of the Cathedral—also the frequent recurrence of the symbol of the “red hand.” In the discussion which followed Mr. Bennett wished to know if the pyramids had a natural core over which they were built, but the lecturer said this was not the case. Mr. May also took part, and some interesting points were raised as to whether the “red hand” was a right or a left one, this having some interest to the province of Ulster.

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#### ADDITIONAL LECTURES.

In addition to the above, three lectures of more special interest were delivered on geological and zoological subjects. On December 3rd and January 7th Dr. J. K. Charlesworth dealt with the Glacial Epoch in Great Britain and Ireland; while on 1st April Mr. A. Milligan lectured on “Adaptation to Environment of Deep Sea Life.”

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#### ANNUAL MEETING.

The fifty-sixth Annual Meeting was held in the Museum on 15th April, the chair being occupied by the President, Mr. A. M<sup>r</sup>. Cleland.

A motion was brought forward on behalf of Mr. S. A. Bennett, who was unavoidably absent, and adopted by the meeting:—  
“That the present Junior and Associate Sections be abolished

and a new Junior Section be formed, with age ranging from 12-21 years. No entrance fee, but an annual subscription of 1/- up to 18 years and 2/6 up to 21 years of age. Members not to receive copies of the Proceedings, but, if they care to, can attend ordinary meetings and excursions of the Club." The Annual Report was read by Dr. J. K. Charlesworth; the Librarian's Report by Mr. S. Wear; the Treasurer's Statement by Mr. S. M. Macoun, Report of the Associate Section by Miss M. W. Rea; the Report of the Junior Section by Miss S. Blackwood.

On the motion of Mr. Elliott, seconded by Mrs. Macoun, it was resolved that these reports be adopted, printed, and circulated as usual.

The election of Office-bearers for 1919-20 was then proceeded with. It was proposed by Mr. Boyd, and seconded by Mr. Pim, that Mr. A. M'I. Cleland be re-elected President. Further, that Mr. S. A. Bennett be re-elected Vice-President; Mr. Macoun be re-elected Treasurer; Mr. S. Wear re-elected Librarian; Mr. A. M'I. Cleland and Mr. J. A. S. Stendall be elected Secretaries. The Sectional Secretaries—Botanical, Mr. N. Carrothers; Geological, Dr. J. K. Charlesworth; Zoological, Mrs. Gibson; Archaeological, Mr. R. May; and Junior, Miss S. Blackwood, were re-elected.

On the motion of Dr. Charlesworth, seconded by Miss M. W. Rea, Messrs. S. M. Macoun and S. Wear were appointed Scrutineers, and a ballot was taken to fill four vacancies in the Committee. On the report of the Scrutineers the President announced that the following had been elected:—Mr. W. C. Boyd, Prof. R. H. Yapp, Rev. W. R. Megaw, and Mr. S. C. Black.

Mr. Stendall, on behalf of the Club, then thanked the retiring Secretaries for their services during the past three years, to which Dr. Charlesworth suitably replied. Suggestions as to places to be visited on the Summer excursions were next made and referred to the Committee for consideration.

With the election of Mr. Kennedy as an ordinary member the proceedings terminated.

# RULES

## OF THE

### Belfast Naturalists' Field Club.

As amended at General Meeting held 15th April, 1919.

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#### I.

That the Society be called "THE BELFAST NATURALISTS' FIELD CLUB."

#### II.

That the object of this Society be the practical study of Natural Science and Archaeology in Ireland.

#### III.

That the Club shall consist of Ordinary, Junior, Life, Corresponding and Honorary Members. The Ordinary Members shall be proposed and seconded at any meeting of the Club and elected by a majority of votes of the members present. They shall pay annually a subscription of Five Shillings. Members who are twelve months in arrear in their subscriptions shall not receive any further circulars or other printed matter.

That the composition fee for Life Membership be Four Guineas.

Junior Members, who must be between the ages of 12 and 21, shall be elected in the same way as Ordinary Members, but shall pay annually a subscription of One Shilling (1/-) from 12 years of age to 18, and a subscription of Two Shillings and Sixpence (2/6) from 18 years of age to 21. Junior Members shall not receive any printed matter except the usual notices; shall not have the power to vote; and shall not borrow books from the Club's Library without special permission from the Librarian. On attaining their majority they shall become Ordinary Members, and shall pay an annual subscription of Five Shillings (5/-).

#### IV.

That the Honorary and Corresponding Members shall consist of persons of eminence in Natural Science, or who shall have done some special service to the Club; and whose usual residence is not less than twenty miles from Belfast. That such Members may be nominated by any Member of the Club, and on being approved by the Committee, may be elected at any subsequent Meeting of the Club by a majority of the votes of the Members present. That Corresponding Members be expected to communicate a paper once within every two years.

## V.

That the Officers of the Club be annually elected and consist of a President, Vice-President, Treasurer, Librarian, and one or two Secretaries, together with the Secretaries of the various Sections of the Club. That the office of President or that of Vice-President shall not be held by the same person for more than two years in succession.

## VI.

That the General Committee shall consist of the above-named officers with nine ordinary members of Committee, and shall hold at least eight meetings during the year; five persons to form a quorum.

That three ordinary members of Committee shall retire annually in order of seniority, those retiring being ineligible for re-election for one year. Should any ordinary member of Committee fail to attend at least three of the Committee meetings held during the year his or her place may be considered vacant and another member elected to fill the position. No ordinary member of Committee shall hold the post of Secretary in any of the Sections. That in the event of a vacancy occurring in the General Committee a new member may be co-opted to fill such vacancy for the remainder of the year.

That nominations for ordinary members of Committee shall be sent in writing to the Secretaries on or before the 21st day of March in each year. That the privilege of nominating members of Committee shall be held by all Ordinary and Life Members of the Club. That the names of those members so nominated shall be published on the circular convening the Annual Meeting, at which the Ordinary Members of Committee shall be elected by ballot. That should the necessity arise the retiring members of Committee shall be balloted for.

## VII.

The Committee may from year to year appoint Sectional Secretaries and Committees, as may be considered desirable, to further original investigations in any one or more departments of the Club's work. No financial responsibility to be incurred by any Sectional Secretary, Sectional Committee, or any Officer of the Club without the previous approval of the Club's Committee. The Junior Section to have a Committee composed of Six Members of the Club, the Chairman to be annually appointed by the General Committee.

## VIII.

That the members of the Club shall hold at least Six Field Meetings during the year, in the most interesting localities, for investigating the Natural History and Archaeology of Ireland. That the place of meeting be fixed by the Committee, and that five days' notice of each Excursion be communicated to Members by the Secretaries. That each of the Sectional Secretaries shall be made responsible for the running of one Regular Excursion, the programme to provide study in the subject appertaining to the Section, and that any additional Special Excursions shall be arranged by the Secretaries of the Sections concerned.

## IX.

That regular Monthly Meetings be held during the Winter Session from November till April, inclusive, for the purpose of reading Papers; such Papers as far as possible to be original, and to treat of the Natural History and Archaeology of the district. That the Papers to be read be secured by a Standing Organising Committee, consisting of the Hon. Secs. of the Club, together with the Sectional Secretaries and a Chairman. That between the Regular Monthly Meetings of the Club Special Meetings open to all Members of the Club may be held, at which Papers of specialised interest would be discussed. That the Sectional Secretaries shall each be responsible for the providing of a programme for one Regular and one Special Meeting, one Regular and one Special Meeting to be arranged by the Hon. Secs. Any extra Meetings shall be arranged by the Organising Committee, if desired. That the programme for the Winter Session shall be completed by the date of its First Meeting and issued to all Members. That each notification announcing a Regular Meeting or Excursion shall also serve to notify Members of the next Special Meeting or Excursion.

## X.

That the Committee shall, if they find it advisable, offer for competition Prizes for the best collections of scientific objects of the district; and the Committee may order the purchase of maps, or other scientific apparatus, and may carry on geological and archaeological searches or excavations, if deemed advisable, provided that the entire amount expended under this rule does not exceed the sum of £10 in any one year.

That the General Committee may offer from time to time such prize or prizes as they may deem desirable for competition among Schools in or near Belfast.

## XI.

That the Annual Meeting be held during the month of April, when the Report of the Committee for the past year, and the Treasurer's Financial Statement shall be presented, the Committee and Officers elected, Bye-laws made and altered, and any proposed alterations in the general laws, of which a fortnight's notice shall have been given, in writing, to the Secretary or Secretaries, considered and decided upon. The Secretaries to give the Members due notice of each intended alteration.

## XII.

Members of other Irish Field Clubs, residing temporarily or permanently in or near Belfast, may be enrolled as Members of the Club without election or entrance fee on production of a voucher of membership of another Club, and without subscription for the current year, on production of a receipt showing that such subscription has been paid to another Club. Failing the production of such receipt, the usual subscription for the current year to be paid to the Treasurer on enrolment. The names of Members so admitted to the Club to be published with the notice of meeting following the date of their enrolment.

## XIII.

That, on the written requisition of twenty-five Members, delivered to the Secretaries, an Extraordinary General Meeting may be called, to consider and decide upon the subject mentioned in such written requisition.

## XIV.

That the Committee may be empowered to exchange publications and reports, and to extend the privilege of attending the Meetings and Excursions of the Belfast Naturalists' Field Club to Members of kindred societies, on similar privileges being accorded to its Members by such other societies.

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RULES FOR THE CONDUCTING OF EXCURSIONS.

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I. The excursion to be open to all Members, each one to have the privilege of introducing two friends. The time for commencing as many as possible of the Half-Day Summer Excursions to be not prior to 2 p.m.

II. A Chairman to be elected as at ordinary meetings.

III. One of the Secretaries to act as Conductor, or, in the absence of both, a Member to be elected for that purpose.

IV. No change to be made in the programme, or extra expense incurred, except by the consent of the majority of the Members present.

V. No fees, gratuities, or other expenses to be paid except through the Conductor.

VI. Every Member or Visitor to have the accommodation assigned by the Conductor. Where accommodation is limited, consideration will be given to priority of application.

VII. Accommodation cannot be promised unless tickets are obtained before the time mentioned in the special circular.

VIII. Those who attend an excursion without previous notice will be liable to extra charge, if extra cost is incurred thereby.

IX. No intoxicating liquors to be provided at the expense of the Club.



## Exchange of Proceedings, 1918-19.

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Bournemouth—Natural Science Society.

Proceedings, Vol. IX. (1916-17).

Bristol—Naturalists' Society.

Proceedings, Vol. IV., Part 3 (1915-16).

Canadian Institute.

Transactions, Vol. XI., Part 2.

Dublin—Royal Irish Academy.

Proceedings, Vol. XXXIV., Sec. B., Nos. 3, 4, and (5, 6).

Sec. C., Nos. 5, 6, 7, 8 and 9.

„ „ XXXV., Sec. C., No. 1.

Abstract of Minutes, 1917-18.

„ Royal Society of Antiquaries of Ireland.

Journal, Vol. XLVIII., Part 1 (June, 1918).

Dumfriesshire and Galloway—Nat. Hist. and Antiquarian Society.

Transactions, Series III., Vol. 5.

Eastbourne—Natural History, Phot. and Lit. Society.

Transactions and Journal, Vol. VIII., Nos. 20, 21, 22 and 23.

Essex—Field Club.

Journal, Vol. XVIII., Parts (6-9), (10-11) and 12.

Glasgow—Royal Philosophical Society of—

Proceedings, Vol. XLVIII. (1916-17).

„ Geological Society of—

Transactions, Vol. XVI., Part 2.

Leyden—Rijks Ethnographisch Museum.

Report for 1916-17.

Liverpool—Naturalists' Field Club.

Proceedings for 1917.

Louth—Archæological Journal of County—

Vol. IV., Part 3.

London—British Association.

Annual Report for 1917.

„ Geologists' Association.

Proceedings, Vol. XXIX., Parts 2 and 3.

Marlborough—College Natural History Society.

Report No. 66 (for 1917).

Manchester—Microscopical Society.

Transactions for 1917.

North Staffordshire—Field Club.

Transactions, Vol. LII. (1917-18).

Norwich—Prehistoric Society of East Anglia

Proceedings, Vol. II., Part 4 (1917-18).

Nova Scotia—Institute of Science.

Proceedings and Transactions, Vol. XIV., Part 3.

Nottingham—Naturalists' Society.

Annual Reports for 1913 to 1918.

Oxfordshire—Ashmolean Natural History Society of—

Proceedings and Report for 1918.

Stavanger Museum.

Aarshefte for 1917.

Torquay—Natural History Society.

Journal, Vol. II., No. 4.

U.S.A.—Californian Academy of Science.

Proceedings, Vol. II., Part 1 (No. 11) : Part 2 (No. 12).

Vol. VI Nos. 8 and 9.

Vol. VII., Nos. 1 to 13.

Vol. VIII., Nos. 1, 3 and 4.

Title Page and Index for Vols. IV., V. and VI. of Series 4.

„ Chapel Hill N.C. — Elisha Mitchell Scientific Society.

Journal, Vol. XXXIII., No. 4.

„ Medford, Mass.—Tuft's College Studies.

Scientific Series, Vol. IV., No. 5.

„ Missouri Botanical Garden.

Bulletin, Vol. VI., Nos. 3 to 10; Vol. VII., Nos. 1 and 2.

„ New York Academy of Sciences.

Annals, Vol. XXVII., pp. 215-243.

„ Philadelphia Academy of Sciences.

Proceedings, Vol. LXIX., Parts 2 and 3 : Vol. LXX., Parts 1 and 2.

„ Washington—Government Printing Works.

Smithsonian Reports, Nos. 2462 to 2466, 2475, 2476.

„ „ Miscellaneous Collections, Vol. LXVIII., No. 10  
Museum Report for 1917.

„ Washington—U.S. Department of Agriculture.

Year Book for 1917.

# List of Members.

Any change in the Address of Members should be at once notified  
to the Secretaries by Post Card.

The Dates prefixed to Members' names signify date of Election.

*O* stands for an Original Member who signed the requisition for the  
formation of the Club in 1863.

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## Hon. Members.

- 1877. Lapworth, Professor Charles, LL.D., F.R.S., The University,  
Birmingham.
- 1904. Plunkett, Thomas, M.R.I.A., Enniskillen.
- 1902. Scharff, Robert F., B.Sc., Ph.D., F.L.S., M.R.I.A., National Museum,  
Kildare Street, Dublin.

## Corresponding Member.

- O* Holden, J. S., M.D., Sudbury, Suffolk.

## Life Members

- 1894. Ewart, Sir, W. Q., Bart., Glenmachan, Strandtown.
- 1903. Stelfox, A. W., A.R.I.B.A., M.R.I.A., Ballymagee, Bangor.
- 1893. Wilson, Alec G., J.P., M.R.I.A., Belvoir Park.

## Ordinary Members.

- 1918. Adams, Miss A. M., Rosemount, Malone Road.
- 1907. Adams, Rev. W. A., B.A., Antrim.
- 1915. Aird, Hugh, 16 Fitzwilliam Avenue.
- 1917. Alderdice, Richard S., 12 Linenhall Street.
- 1866. Anderson, Sir Robert, Bart., J.P., Donegall Place.
- 1911. Anderson, Miss Sarah, 4 Church View, Holywood.
- 1882. Andrew, J. J., L.D.S., University Square.
- 1892. Andrews, Miss E., 12 College Gardens.
- 1912. Andrews, Miss E. L., Inla, Comber.
- 1911. Andrews, Miss M. A., 50 Eglantine Avenue.
- 1912. Andrews, Dr. Marion B., 17 University Square.
- 1913. Andrews, Michael C., 17 University Square.
- 1916. Armstrong, Miss Dorothy, Corlea, Somerton Road.

1916. Baillie, Robert, Ellerslie, Ravenhill Park.
1907. Baillie, W. T., Marathon, Green Road, Knock.
1901. Barrett, J. H., Farnham Road, Bangor.
1915. Beattie, John Carson, Deaf and Dumb Institution, Lisburn Road.
1905. Beck, Miss, 1 Derryvolgie Avenue.
1913. Bell, D. M., 22 Cyprus Avenue.
1896. Bell, E. George, Solitude, Lurgan.
1893. Bell, Robert, 64 Newton Avenue.
1917. Bell, Miss Janet M., Daisybank, Holywood.
1909. Bennett, Edward, Forth River Mill.
1908. Bennett, S. A., B.A., B.Sc., Campbell College.
1884. Bigger, Francis J., M.R.I.A., Ardtrigh, Antrim Road.
1914. Bird, Miss, 18 Connaught Mansions, Prince of Wales Road, Battensea, S.W. 11.
1916. Black, S. C., 15 College Gardens.
1898. Blackwood, Miss S., 6 College Green.
1893. Boyd, Miss, c/o. A. E. Large, Bank Chambers, Palmerston Road, Southsea.
1894. Boyd, W. C., J.P., Hazelbank Villa, Ravenscroft Avenue.
1916. Bradley, Miss L. L., Haypark House, Knock.
1917. Bradley, Mrs., Haypark House, Knock.
1883. Brandon, Hugh B., J.P., 2 Wellington Place.
1863. Brett, Sir Charles H., Grettton Villa South.
1883. Brown, Thomas, J.P., 102 Donegall Street.
1911. Browne, G. B., 356 Ormeau Road.
1876. Bulla, Charles, 272 Lisburn Road.
1899. Burrowes, W. B., Ballynafeigh House.
1918. Byrne, Mrs., 24 College Square North.
1903. Campbell, D. C., J.P., M.B.O.U., Templemore Park, Londonderry.
1909. Campbell, John, Albert Brickworks, Carrickfergus.
1916. Campbell, John, 194 Antrim Road.
1917. Campbell, James, Jennymount Mill, Belfast.
1891. Capper, J. Malcolm, 14 Linenhall Street.
1904. Carmody, Rev. Canon W. P., Lisburn.
1892. Carrothers, Nathaniel, 145 Stranmillis Road.
1892. Carson, J. C., 8 Wellington Place.
1917. Carson, James, Parkmount, Lisburn.
1914. Carter, C. S., 25 Donegall Street.
1907. Chambers, W., 3 Custom House Square.
1914. Charlesworth, John K., M.Sc., Ph.D., F.G.S., Queen's University.
1901. Cheyne, H. H., Roseneath, Bangor.
1894. Cleland, Alex. M.L., Macedon, Green Road, Knock.
1894. Cleland, Mrs. Annie, Macedon, Green Road, Knock.
1890. Cleland, James A., Bernagh West, Malone Park.
1893. Cleland, W. W., Osborne House, Osborne Park.
1917. Close, R. M., 13 Donegall Square North.
1904. Cocking, Miss C. E., 19 Glebe Road, Huddersfield.

1914. Corrigan, Chas., 133 Royal Avenue.  
 1906. Cowie, James, Midland Railway Co.  
 1913. Cunningham, Miss M. E., Glencairn, Belfast.  
 1884. Cunningham, Samuel, Fernhill.  
 1915. Cunningham, Josias, M.B.O.U., Fernhill, Belfast.
1916. Davis, Miss E. C., Lauraville, Balmoral.  
 1905. Dawson, R. A., A.R.C.A., Inniskeen, Holywood.  
 1915. Denby, Miss Alice M., Evetide, Westland Gardens.  
 1891. D'Evelyn, Alex. M., M.D., Ballymena.  
 1915. Dick, Miss M. E., M.A., Wynstay, Rosetta Park.  
 1891. Dickson, John M., 28 Wellington Park.  
     O Donaldson, George, 1 Prospect Street.  
 1907. Doran, John, J.P., Danottar, Malone Road.  
 1909. Drummond, Miss Ina, 39 Atlantic Avenue.  
 1916. Duffin, Miss Mabel W., B.Sc., Rokeby, Deramore Park.  
 1916. Dunbar, Rev. Kenneth, The Mause, Comber.  
 1908. Duncan, William, 24 Queen Street.  
 1912. Dundee, Miss B., Eglantine Avenue.  
 1912. Dunlop, (the late) T. W., Scarva.  
 1909. Dwyerhouse, Major A. R., D.Sc., F.G.S., M.R.I.A., Queen's University.
1916. Edwards, Herbert, 54 Ulsterville Avenue.  
 1916. Edwards, Mrs., 54 Ulsterville Avenue.  
 1884. Elliott, David, B.A., J.P., Ardree, Bloomfield.  
 1912. Erskine, Mrs., Clarendon, Holywood.
1868. Faren, W., 11 Mountcharles.  
 1912. Ferguson, Mrs., St. Helen's, Holland Park, Knock.  
 1913. Ferguson, Samuel, St. Helen's, Holland Park, Knock.  
 1918. Fiddis, H., 20 Wilmont Terrace, Lisburn Road.  
 1897. Finlay, Miss, St. Hilda's East, 3 Old Nichol Street, Bethnal Green, London.  
 1906. Finlay, Arch. H., Willesden, Holywood.  
 1899. Forth, (the late) Capt. Francis C., F.R.C.Sc.I., Technical Institute.  
 1899. Foster, Nevin H., F.L.S., M.R.I.A., M.B.O.U., Hillsborough.  
 1903. Foster, Mrs. N. H., Hillsborough.  
 1911. Foster, Miss A. B., B.Sc., Y.W.C.A., William Street, Waterford.  
 1892. Fulton, David, Arlington, Windsor Avenue.  
 1916. Fulton, Miss D., Laurelbank, Woodvale Road.
1901. Gaffikin, William, J.P., Notting Hill.  
 1891. Galloway, Joseph, 59 Eglantine Avenue.  
 1892. Gamble, Miss, Lorne, Craigavad.  
 1913. Gardner, Miss Nettie H., B.Sc., Hawthornden Road, Knock.

1916. Gibb, Miss C., 7 Claremont Street.  
 1893. Gibson, Andrew, Lansdowne Road.  
 1917. Gibson, Mrs., Berrington, Lansdowne Road.  
 1911. Gibson, Mrs. Jos., Hillsborough.  
 1905. Glover, James, Seaview, Kirkeubbin.  
 1885. Godwin, William, Queen Street.  
 1918. Gordon, Eustace, 35 Rosemary Street.  
 1918. Gourlay, Mrs. J., 18 Willowbank Street.  
 1892. Green, Mrs. Isaac, Hawthornden, Knock.  
 1895. Green, Wm. A., 4 Salisbury Terrace, Chichester Park.  
 1912. Greenfield, Mrs. T. K., 8 High Street, Holywood.  
 1901. Greeves, J. Theodore, Nendrum, Knockdene Park.  
 1901. Greeves, W. Leopold, Ormeau Avenue.  
 1901. Greeves, Fergus M., Rydal Mount, Knock.  
 1918. Greeves, Owen, Tavanagh House, Portadown.  
  
 1908. Hadden, Mrs., Magharee, Portadown.  
 1907. Hadden, Dr. Robert E., Ardalla, Portadown.  
 1918. Hagan, Miss I. M., Rathcowle, Jordonstown.  
 1883. Hamilton, Rev. T., D.D., LL.D., Vice-Chancellor, Queen's University.  
 1908. Hamilton, Miss, 5 Church Avenue, Holywood.  
 1877. Hamilton, John, 5 Church Avenue, Holywood.  
 1916. Harper, V. M., B.A., Campbell College.  
 1915. Hawthorne, Rev. Samuel, B.A., Helen's Bay.  
 1916. Hawthorne, Miss, Helen's Bay.  
 1908. Henry, F. W., Ye Olde Castle, Castle Place.  
 1915. Herdman, Miss E. W., Fountainville, University Road.  
 1876. Heron, F. A., Cultra, Holywood.  
 1905. Hobson, Mrs., Marino.  
 1895. Hogg, A. R., 13 Trinity Street.  
 1908. Hogg, D. J., 16 Kansas Avenue.  
 1903. Holland, Miss, Cadogan Park.  
 1904. Holland, Frank, Osborne Gardens.  
 1906. Hopkirk, F. G., Midland Railway Co.  
 1911. Houston, Miss, Lisheen, Sans Souci Park.  
 1914. Houston, James Dick, Northern Bank, Lurgan.  
 1913. Humphreys, Miss Norah, Lynford, Osborne Park.  
 1915. Hunter, Miss K., Waterford Terrace, Coleraine.  
  
 1892. Jaffé, Lady, Kinedar, Strandtown.  
 1909. Jenkins, W. A., 6 Elmwood Terrace.  
 1914. Jenkinson, Hy., 29 Rosemary Street.  
 1901. Johnson, Rev. W. F., M.A., F.E.S., M.R.I.A., Acton Glebe, Poyntzpass.  
 1906. Johnston, F. W., The Cottage, Cultra.  
 1916. Johnston, Miss M. B., Beechville, Glenburn Park.  
 1916. Johnstone, Mrs., Riverside, Holywood.

1916. Kay, Miss M. P., B.Sc., Burnside, Bangor.  
 1917. Keiller, W., 11 Chichester Street.  
 1918. Kennedy, D., Pembroke, Wandsworth Road, Knock.  
 1919. Kennedy, R. M., 16 Green Road, Knock.  
 1899. Killen, William, 20 Waring Street.  
 1886. Kirkpatrick F., 27 Oxford Street.  
 1915. Kirkpatrick, W. H., Marlborough Park S.  
 1868. Knowles, W. J., M.R.I.A., Flixton Place S., Ballymena.  
 1877. Kyle, R. A., 15 Wellington Park.  
  
 1916. Lacy, Edwin, 46 Victoria Gardens, Chichester Park.  
 1901. Larmor, H. G., J.P., Lisburn.  
 1915. Lawrie, Thomas, East Bridge Street.  
 1916. Lawther, Miss M. J. V., Marathon, Antrim Road.  
 1915. Leathem, Miss M., 1 Gordon Terrace, Agincourt Avenue.  
 1912. Ledgerwood, N. J., J.P., 10 Wellington Park.  
 1916. Lees, Miss S. L., Drummadoon, Castle Park.  
 1877. Lett, Rev. Canon H. W., M.A., M.R.I.A., Aghaderg Glebe,  
     Loughbrickland.  
 1918. Lewis, Mrs. A. J., 2 Ranfurly Drive.  
 1918. Lindsay, Eric, Barbaraville, Annadale.  
 1899. Lindsay, Professor, M.D., 3 Queen's Elms.  
 1915. Lindsay, Mrs., Barbaraville, Annadale.  
 1893. Lowry, D. E., 25 Donegall Place.  
 1908. Lowry, James, Llewellyn Avenue, Lisburn.  
 1918. Lowry, Miss, Hazelwood, Bloomfield.  
 1910. Lowry, Miss L., Hazelwood, Bloomfield.  
 1917. Lyttle, James, 1 Olney Terrace, Ballygomartin Road.  
  
 1915. MacCarthy, Mrs., Freshford, Knock.  
 1905. MacCleary, A., Kensington Hotel, College Square East.  
 1917. MacDevitt, H., 115 High Street, Holywood.  
 1903. MacIlwaine, Capt., J.E., M.D., 26 College Gardens.  
 1917. Mackintosh, Donald T., 59 Malone Avenue.  
 1914. MacLaine, Lachlan, Rathaline, Annadale Avenue.  
 1915. Maconachie, Rev. D. H., B.A., B.D., The Mause, Holywood.  
 1915. Maconachie, Mrs., Brooklands, Holywood.  
 1905. Macoun, Mrs., Claerolla, Windsor Park.  
 1912. Macoun, Stephenson M., Claerolla, Windsor Park.  
 1901. MacRea, Kenneth, Balmoral.  
 1876. Major, Rev. J. J., Dagh.  
 1905. Malcolm, Miss Susan, Downshire Road, Holywood.  
 1899. Malcomson, J. G. B., Cairnburn, Strandtown.  
 1901. Malcomson, Herbert T., M.B.O.U., 32 Arthur Street.  
 1901. Malcomson, Joseph, 32 Arthur Street.  
 1914. Manning, J. W., Slieve Donard Hotel, Newcastle.  
 1880. Marsh, Mrs., Glenlyon, Holywood.

1891. Marshall, H. C., Bryansburn Road, Bangor.  
 1916. Masterson, Miss, 93 Wellesley Avenue.  
 1915. Mawdsley, Miss, Macedon, Green Road, Knock.  
 1892. Maxton, James, Ulster Street.  
 1908. Maxwell, Henry, Dunalbine, Denamore Park.  
 1893. May, Robert, 40 Hopetield Avenue.  
 1993. Mayne, H. Horner, 24 Elmwood Avenue.  
 1917. Megaw, Rev. W. R., B.A., 55 Botanic Avenue.  
 1918. Merrifield, Jas., 105 The Mount.  
 1918. Metcalfe, A. W., Hawthornden Road, Knock.  
 1906. Millar, Thomas O., 306 Antrim Road.  
 1907. Milligan, Miss, Lisnamaul, Ormeau Road.  
 1915. Milligan, Arthur G., The Grange, Annadale.  
 1901. Milne, (the late) J. N., Westbank, Partickhill Road, Glasgow.  
 1898. Montgomery, H. C., 40 Rosemary Street.  
 1913. Montgomery, Miss E. S., 26 College Green.  
 1911. Montgomery, Miss Jane E., 8 Sandhurst Road.  
 1916. Moore, Frank, F.E.I.S., Home-Lyn, Marlborough Park N.  
 1917. Morrison, Rev. Robert, B.A., The Curateage, Hillsborough.  
 1892. Munce, W. B., Rosemary Street.  
  
 1899. M'Bretney, W. A. J., 31 Haypark Avenue.  
 1909. M'Canee, James, 2 Easton Terrace.  
 1913. M'Canee, Stoupe, 3 Markham Square, London, S.W.  
 1884. M'Cleery, H., 20 Franklin Street.  
 1912. M'Clelland, E. W., B.Sc., 79 Kansas Avenue.  
 1879. M'Connell, James, J.P., Stranmillis House.  
 1903. M'Connell, Miss, Stranmillis House.  
 1905. M'Crum, Mrs., Ballyvesey, Carnmoney.  
 1913. M'Dowell, Miss, 7 Lower Crescent.  
 1918. M'Dowell, R., Frontinac, Ravenhill Park.  
 1914. M'Kay, Miss E. W., B.Sc., Ardbana Terrace, Coleraine.  
 1904. M'Kean, Edward John, B.A., B.L., Rosaville, Fortwilliam Park.  
 1906. M'Kinney, Miss, Sentry Hill, Carnmoney.  
 1917. M'Ilroy, R., 32 Pandora Street.  
 1912. M'Meehin, Miss A. M., Sunnyside, Carnmoney.  
 1917. M'Meehin, Adam, Cogry House, Doagh.  
     O M'Millan, W., J.P., 30 Ashley Avenue.  
  
 1898. Orr, James, 17 Garfield Street.  
  
     O Patterson, D. C., Glenard, Holywood.  
 1888. Patterson, Robert, F.L.S., M.R.I.A., M.B.O.U., Glenbank, Holywood.  
     O Phillips, Wm. H., Lemonfield, Holywood.  
 1867. Pim, John, J.P., Bonaven, Antrim Road.  
 1868. Pim, Thomas W., 21 Victoria Street.



1869. Pim, Joshua, 6 Donegall Square South.  
 1903. Pim, W. R., Lisnagarvey, Lisburn.  
 1903. Pooler, Rev. Chas. K., B.D., M.R.I.A., Strangford.  
 1890. Porter, F. A., Queen's Square.  
 1890. Porter, William, Beechview, Balmoral Avenue.  
 1883. Praeger, R. L., B.A., B.L., M.R.I.A., National Library, Kildare Street, Dublin.
1901. Rankin, Will, Gordonall, Myrtlefield Park.  
 1904. Rankin, Mrs., Gordonall, Myrtlefield Park.  
 1907. Rea, Miss M. W., Salem House, Sydenham.  
 1916. Rea, Miss L. C., Salem House, Sydenham.  
 1907. Riddell, Mrs., Donegall Park Avenue.  
 1913. Ritchie, Miss Frances, B.Sc., Anaghlonge, Banbridge.  
 1903. Robb, H. M., 44 Ulsterville Avenue.  
 1909. Russell, Nelson, Lisburn.  
 1916. Rutledge, Miss Ethel J., M.Sc., 92 North Parade.  
 1911. Ryves, Miss, 65 Wellington Avenue.
1899. Sandes, Robert, Chorlton, Adelaide Park.  
 1913. Savage, W. E. J., Lincoln Avenue.  
 1917. Sayers, Miss, B.A., Bartragh, Knock.  
 1903. Sefton, Burton, St. Aubyn's, Deramore Drive.  
 1918. Seymour, J., Inchmarlo, Marlborough Park.  
 1911. Shaw, G. W., Ulster Bank, York Street.  
 1905. Sheils, Rev. John F., Saintfield.  
 1916. Silcock, Miss E. A., B.Sc., Railway Street, Lisburn.  
 1890. Skillen, Joseph, Largymore, Lisburn.  
 1918. Slane, Miss U., Queen's University.  
 1868. Speers, Adam, J.P., B.Sc., Holywood.  
 1893. Stears, Samuel M., 6 Rosetta Avenue.  
 1893. Steele, Miss, Dooneen, Marlborough Park.  
 1910. Stelfox, Mrs. A. W., B.Sc., A.R.C.Sc.I., Ballymagee, Bangor.  
 1911. Stendall, J. A. Sidney, Municipal Museum.  
 1904. Stephens, John Kyle, J.P., 13 Donegall Square North.  
 1894. Stewart, W. J., Ormeau Road.  
 1916. Stewart, Miss L. K., B.Sc., Boghill, Coleraine.  
 1909. Stokes, W. J., Malone Park.  
 1919. Strain, W., Windsor Park.  
 1866. Swanston, William, F.G.S., Farm Hill, Dunmurry.
1871. Todd, John, J.P., Clarinda, Fortwilliam Park.  
 1901. Tomlinson, W. J. C., 17 Glandore Gardens.  
 1875. Traill, W. A., M.A. Ing., Bushmills.  
 1904. Turtle, William Haydock, 1 Holyrood, Malone Road.  
 1909. Turtle, Mrs. Herbert, Rosemount, Knock.

1879. Waddell, Rev. C. H., M.A., B.D., M.R.I.A., The Rectory,  
Greyabbey.
1894. Walsh, Robert, Ashestiel, Malone Road.
1893. Walker, W. J. D., C.B., The Sycamores, Drogheda.
1917. Walker, Franklin M., Wynard, Helen's Bay.
1893. Walkington, (the late) Miss, LL.D., Straudtown.
1911. Ward, Miss K., Albertville, Sydenham.
1909. Watson, John G., The Maples, King's Road, Knock.
1905. Wear, Sylvanus, 19 Hopefield Avenue.
1880. Welch, Robert J., M.R.I.A., 49 Lonsdale Street.
1877. Whitla, Sir William, M.D., College Square North.
1917. Williamson, James, J.P., Sandown Park, Knock.
1893. Wilson, George, 9 Bedford Street.
1901. Wilson, Prof. Gregg, M.A., D.Sc., M.R.I.A., Queen's University.
1904. Wilson, Mrs., Deramore Park.
1893. Woolcombe, Robt. Lloyd, M.A., LL.D. (Dublin University), F.L.  
Inst., F.R.C.Inst., F.R.G.S., F.R.E.S., F.S.S., M.R.I.A., 14  
Waterloo Road, Dublin.
- O Workman, Rev. R., M.A., Crusheen, Cadogan Park.
1901. Workman, W. H., F.Z.S., M.B.O.U., Lismore, Windsor Avenue.
1867. Wright, Joseph, F.G.S., 10 May Street.
1914. Yapp, Prof. R. H., M.A., Queen's University.

### Associate Members.

1915. Armstrong, Edward, Corlen, Somerton Road.
1917. Baker, Arthur, Trevara, Knock.
1911. Ferguson, Miss Olive, Glentfield Place, Ormeau Road.
1916. George, Alfred H., 22 Thorndale Avenue.
1917. Greeves, J. R. H., Wyncroft, Donaghadee.
1915. Mussen, Robert Walsh, Hillhall,  
Princetown Road, Bangor.
1919. M'Bride, A., Ballinabough, Templepatrick.
1919. M'Kibben, Miss, Louisville, Knockdene Park.
1919. Roden, Miss N. N., Riddel Hall, Stranmillis.
1916. Shaw, Miss Winnie, Grotli, Salisbury Gardens.
1919. Smyth, Miss G., Fernhurst, Knockdene Park.

### Junior Members.

1916. Bell, Miss Emma, Cressington, Rosetta Park.  
1918. Bent, H. L., Lochlee, Kensington Road, Knock.  
  
1916. Dawson, Brian, Baythorpe, Holywood.  
1916. Deane, Archibald, Mount Nephin, Knockbreda.  
1912. Deane, John, Mount Nephin, Knockbreda.  
1913. Deane, Lindsay, Mount Nephin, Knockbreda.  
  
1917. Ferguson, Miss Noreen, Glenfield Place, Ormeau Road.  
  
1916. Gilmour, Humphrey, Knocknarea, Kensington Road.  
1916. Gourlay, Jack, 18 Willowbank Street.  
1917. Grainger, Charles, Craigavad.  
  
1918. Harris, Norman, 109 Fitzroy Avenue.  
  
1918. Macknight, John, 220 Springfield Road.  
1915. Mayne, Miss Betty, 24 Elmwood Avenue.  
1916. Morton, Walter E., 65 Ulsterville Avenue.  
  
1918. M'Carthy, Miss Daisy, 4 Ardlee Terrace, Holywood.  
1918. M'Carthy, Desmond, 4 Ardlee Terrace, Holywood.  
  
1918. Quick, Geoffrey G., 17 Rossmore Avenue.  
1918. Quick, Kenneth J., 17 Rossmore Avenue.  
  
1916. Sloan, Miss Kathleen, Anneville, North Road.  
1915. Stephenson, Miss Kathleen, 2 College Park East.  
  
1915. Twadell, Miss Amy, Nashville, Malone Park.  
  
1916. Young, Miss Carrie, Moyrusk, Marlborough Park.

# BELFAST NATURALISTS' FIELD CLUB.

FIFTY-SEVENTH YEAR, 1919-20

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In accordance with resolution passed at General Meeting held on 28th April, 1911, the following reductions have been made in the prices of the Proceedings, &c., to Members of the Club. When the stock has been sufficiently reduced prices will be raised again.

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"	"	"	"	„ II. (1881-82 to 1886-87) to 2/6	„
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